



Amendment in response to Office Action dated 11/19/2002

Serial No.: 08/659,046
Filed: June 3, 1996
Inventor: P. BAUER *et al.*
For: METHOD AND APPARATUS FOR
CUTTING BODIES HAVING NON-
CIRCULAR CROSS-SECTION

Pennie & Edmonds, LLP: (202) 496-4400
Attorney Docket: 8932-309
Date: April 18, 2003
Appendix B: 1 of 7

APPENDIX B

Claims pending in the application: 19, 20, 22-28, and 30-55

Claims rejected: 19, 20, 22-28, and 30-41

PENDING CLAIMS

19. (Twice amended) A bone plate cutting assembly for shearing by transverse forces a bone plate having a non-circular cross-section and a longitudinal axis, comprising:
a first shearing element comprising
a handle for manipulation of the first shearing element; and
a first head attached to the handle and having a front face, a back face, and at least one outer surface, the first head having a slot through the front and back faces and extending from the outer surface towards an interior of the first head; and
a second shearing element comprising
a handle for manipulation of the second shearing element; and
a second head attached to the handle and having a front face, a back face, and at least one outer surface, the second head having a slot through the front and back faces and extending from the outer surface towards an interior of the second head;
wherein the first shearing element is separate and unconnected from the second shearing element and independently movable thereof, and each slot has at least one bevelled cutting edge, and the first and second heads contact one another as the first and second heads rotate counter to one another so that the cutting edges apply a shearing force on opposite sides of the bone plate.

20. (Amended) The assembly of claim 19, wherein each slot has a second cutting edge.

22. (Amended) The assembly of claim 20, wherein each slot has opposing cutting edges.

23. The assembly of claim 19, wherein the back faces are substantially flat.

24. (Amended) The assembly of claim 23, wherein the back faces are substantially smooth.

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25. (Amended) The assembly of claim 19, wherein at least a portion of each handle is tapered.

26. (Amended) The assembly of claim 19, wherein each handle has a longitudinal axis and the relative position of the longitudinal axes of the handles are configured at an acute angle when initiating rotation of the heads about the bone plate.

27. (Amended) The assembly of claim 26, wherein the angle formed between the handles of each head decreases as the heads are rotated about the bone plate.

28. The assembly of claim 19, wherein the heads are disk shaped.

30. (Amended) A bone plate cutting apparatus for shearing by transverse forces a bone plate having a non-circular cross-section and a longitudinal axis, comprising:

a first shearing element comprising

a handle for manipulation of the first shearing element; and

a first head attached to the handle and having upper, lower, and side surfaces, and a slot through the upper and lower surfaces with a bevelled cutting edge thereon, the slot having fixed dimensions and extending from the side surface and tapering from the side surface toward an interior of the first head; and

a second shearing element comprising

a handle for manipulation of the second shearing element; and

a second head attached to the handle and having upper, lower, and side surfaces, and a slot through the upper and lower surfaces with a bevelled cutting edge thereon, the slot having fixed dimensions and extending from the side surface and tapering from the side surface toward an interior of the second head,

wherein rotation of the first and second heads counter to one another with the heads directly touching each other at the cutting edges applies a torsional shearing force on the bone plate in a plane transverse to the longitudinal axis of the bone plate.

31. The apparatus of claim 30, wherein the upper and lower surfaces of each head are substantially smooth and flat.

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32. The apparatus of claim 30, wherein the length of each slot exceeds the distance between the upper and lower surfaces.

33. The apparatus of claim 30, wherein the length of each slot exceeds the width of each slot.

34. The apparatus of claim 30, wherein at least a portion of each handle is tapered.

35. (Amended) The apparatus of claim 30, wherein each handle has a longitudinal axis and the relative position of the longitudinal axes of the handles are configured at an acute angle when initiating rotation of the heads about the bone plate.

36. (Amended) The apparatus of claim 30, wherein each handle has a longitudinal axis and the angle formed by the relative position of the longitudinal axes of the handles of each head decreases as the heads are rotated about the bone plate.

37. The apparatus of claim 30, wherein the heads are disk shaped.

38. The apparatus of claim 30, wherein each slot has two opposing cutting edges.

39. (Amended) The apparatus of claim 30, wherein the first and second shearing elements have substantially identical structure.

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	Appendix B: 4 of 7		

40. (Amended) A cutting assembly for shearing a bone fixation member having a longitudinal axis and opposing sides, comprising:

a first shearing element comprising

a handle for manipulation of the first shearing element;

a first head attached to the handle and having a front face, a back face having a surface a portion of which is substantially flat and at least one outer surface, the first head having a slot of fixed dimensions through the front and back faces and extending from the outer surface toward an interior of the first head, the slot defining opposing faces, at least one of such opposing faces tapering from the front face towards the back face such that the distance between the opposing faces at the front face is greater than the distance between the opposing faces at the back face; and

a second shearing element comprising:

a handle for manipulation of the second shearing element; and

a second head attached to the handle and having a front face, a back face having a surface a portion of which is substantially flat, and at least one outer surface, the second head having a slot of fixed dimensions through the front and back faces and extending from the outer surface toward an interior of the second head, the slot defining opposing faces at least one of such faces tapering from the front face towards the back face such that the distance between the opposing faces at the front face is greater than the distance between the opposing faces at the back face,

wherein the tapered opposing face of each shearing element forms a cutting edge thereon, and at least a portion of the cutting edges contact opposite sides of the bone fixation member when the back faces of the respective shearing elements are rotated while directly touching each other.

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41. (Twice amended) A bone plate cutting assembly for shearing by transverse forces a bone plate having a non-circular cross-section and a longitudinal axis, comprising:

a first shearing element comprising

a handle for manipulation of the first shearing element; and

a first head attached to the handle and having a front face, a back face, and at least one outer surface, the first head having a slot through the front and back faces and extending from the outer surface towards an interior of the first head, the slot extending across about one-half the back face; and

a second shearing element comprising

a handle for manipulation of the second shearing element; and

a second head attached to the handle and having a front face, a back face, and at least one outer surface, the second head having a slot through the front and back faces and extending from the outer surface towards an interior of the second head;

wherein the first and second slots define opposing faces and at least one opposing face of each set of opposing faces intersects the back face of the shearing element to form a bevelled cutting edge and wherein rotation of the first and second heads counter to one another about an axis of rotation with the heads directly touching each other at the cutting edges applies a torsional shearing force on the bone plate and the axis of rotation is selectively located within the first slot.

42. (New) The assembly of claim 41, wherein the first and second heads are unconnected for selectively locating the axis of rotation at two or more locations within the first slot.

43. (New) The assembly of claim 41, wherein the axis of rotation is selectively located about half-way across the back face of the first slot.

44. (New) The assembly of claim 42, wherein the first and second slots define opposing faces and each opposing face of each set of opposing faces intersects the back face of the shearing element to form a bevelled cutting edge.

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45. (New) The assembly of claim 43, wherein each set of opposing faces have bevelled cutting edges facing in one direction.

46. The assembly of claim 41, wherein the heads are disk shaped.

47. (New) The assembly of claim 40, wherein the back faces are substantially smooth.

48. (New) The assembly of claim 40, wherein each handle has a longitudinal axis and the relative position of the longitudinal axes of the handles are configured at an acute angle when initiating rotation of the heads about the bone plate.

49. (New) The assembly of claim 48, wherein the angle formed between the handles of each head decreases as the heads are rotated about the bone plate.

50. (New) The assembly of claim 40, wherein the heads are disk shaped.

51. (Twice amended) A bone plate cutting assembly for shearing by transverse forces a bone plate having a non-circular cross-section and a longitudinal axis, comprising:
a first shearing element comprising

a handle for manipulation of the first shearing element; and

a first head attached to the handle and having a front face, a back face, and at least one outer surface, the first head having a slot through the front and back faces and extending from the outer surface towards an interior of the first head; and

a second shearing element comprising

a handle for manipulation of the second shearing element; and

a second head attached to the handle and having a front face, a back face, and at least one outer surface, the second head having a slot through the front and back faces and extending from the outer surface towards an interior of the second head;

wherein each slot has two beveled cutting edges, and the first and second heads contact one another as the first and second heads rotate counter to one another so that the cutting edges apply a shearing force on opposite sides of the bone plate.

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52. (New) The assembly of claim 51, wherein the back faces are substantially smooth.

53. (New) The assembly of claim 51, wherein each handle has a longitudinal axis and the relative position of the longitudinal axes of the handles are configured at an acute angle when initiating rotation of the heads about the bone plate.

54. (New) The assembly of claim 53, wherein the angle formed between the handles of each head decreases as the heads are rotated about the bone plate.

55. (New) The assembly of claim 51, wherein the heads are disk shaped.